

REMARKS

This communication is a full and timely response to the aforementioned non-final Office Action dated November 6, 2006. By this communication, claims 1-28 have been amended. Support for the subject matter recited in claim 1 can be found, for example, in Figure 10 and at page 12, line 26 through page 13, line 8 of the Specification. Claims 1-28 are pending, where claims 3, 7, 16-24, and 26-28 are withdrawn. Reconsideration and allowance of all pending claims are respectfully requested.

In numbered paragraph 3 on page 3 of the Office Action, claims 10-15 are rejected under 35 U.S.C. §112, second paragraph, as indefinite. Applicants respectfully traverse this rejection. However, in an effort to expedite prosecution these claims have been amended to address the Examiner's concerns. Applicants respectfully request that this rejection be withdrawn. Moreover, because no prior art has been applied to these claims, Applicants request the allowance of claims 10-15.

In numbered paragraph 5, on page 3 of the Office Action, claims 1, 2, 9, and 25 are rejected under 35 U.S.C. §102(b) as anticipated by *Krim* (U.S. Patent No. 5,831,780). Also, in numbered paragraph 7 on page 4 of the Office Actions, claims 1, 2, 4-6, 9, and 25 are rejected under 35 U.S.C. §103(a) as unpatentable over *Plante* (U.S. Patent No. 4,655,563) in view of *Clemino* (U.S. Patent No. 4,670,338). Applicants respectfully traverse these rejections.

As a preliminary matter, claim 1 has been amended to include the subject matter previously recited in dependent claim 4. As a result, the rejection under 35 U.S.C. §102 is rendered moot. Applicants will address the rejection of claim 1 with respect to the rejection of claim 4.

As variously exemplified in Figures 1-21, the Specification describes exemplary embodiments of a deformable mirror holder. The deformable mirror includes a mirror substrate having an outer face with a reflecting surface 34 formed by a series of thin dielectric coating. At least one piezoelectric element 33 is bonded to the non-active, inner face of the mirror substrate 32 using an epoxy resin. A common electrode strip 38 is located between the non-active inner face of the mirror substrate 32 and the piezoelectric element 33. An array of electrodes 37 is used to activate the piezoelectric element 33, by applying a bias voltage between the electrodes 37 and the common electrode 38 causes the piezoelectric elements 33 to deform locally so that, in turn, the mirror substrate 32 deforms to create a mirror with a desired shape.

Claim 1 broadly encompasses the aforementioned exemplary embodiment and recites, among other elements, that the support structure includes a plurality of discrete flexible support elements that are disposed in an equi-spaced relationship in a circular arrangement, where each support structure is arranged to be in contact with one or more of the mirror electrodes.

The *Plante* patent discloses a deformable mirror having actuators 18 fasten between a top sheet 10 and a bottom sheet 12 of the mirror. The actuators 18 are formed from an electrodistortive material that is stacked in layers 32 with electrodes 34 interleaved there between. When an electrical signal is applied between at least two of the electrodes 34, the electrodistortive material 32 between those electrodes elongates. The Examiner alleges that the actuator of the *Plante* patent is analogous to the claimed support structure. Applicants submit, however, that the actuator

configuration as described in the *Plante* patent does not meet the support structure as recited in claim 1.

For example, the mirror electrodes of claim 1 are formed on a surface of a deformable mirror. In contrast, electrodes of the *Plante* patent are interleaved within the material of the actuators. Therefore, the electrodes cannot be formed on a surface of the deformable mirror as claimed. The *Clemino* patent is applied to allegedly teach the use of a flexible epoxy adhesive and fails to remedy the aforementioned deficiency of the *Plante* patent. For at least these reasons, Applicants respectfully submit that neither the *Plante* patent nor the *Clemino* patent when taken individually or in combination fail to teach or suggest every element recited in claim 1. Thus, a *prima facie* case of obviousness has not been established.

To establish *prima facie* obviousness of a claimed invention, all of the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). Moreover, obviousness "cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination." ACS Hosp. Sys. V. Montefiore Hosp., 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). For at least these reasons, Applicants respectfully request that the rejection of claim 1 and its corresponding dependent claims under 35 U.S.C. §103 be withdrawn.

In numbered paragraph 8 on page 6 of the Office Action, the Examiner acknowledges that claim 8 contains allowable subject matter. In an effort to expedite prosecution, Applicants have placed claim 8 into independent form.

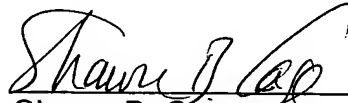
Based on at least the foregoing amendments and remarks, Applicant submits that claims 1, 2, 5, 6, 9-15, and 25 are allowable and request for the rejoinder and allowance of withdrawn claims 3, 7, 16-24, and 26-28. Accordingly, Applicant requests a favorable examination and consideration of the instant application. In the event the instant application can be placed in even better form, Applicant requests that the undersigned attorney be contacted at the number below.

Respectfully submitted,

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